



## Grade One

### Focus:

UNDERSTANDING BRAIN AND SPINAL SAFETY

### Curriculum:

- Health: Identify major parts of the body by their proper names.

### Content:

- key vocabulary: skull, brain, spinal cord, spine, nerves.
- the brain is the most important part of the human body
- the brain makes the body work and tells the nerves in the spinal cord what to do
- the skull helps protect the brain - which is soft
- the spine helps protect the spinal cord
- the spinal cord sends messages to the legs and arms so they can move
- the main causes of brain and spinal cord injuries are motor vehicle crashes, falls, violence, recreation and sports.

### Material Provided:

- work sheets, words to songs and poems
- Think First video, poster and comic to colour
- *TD Think First At Home* activity #1

### Pre-Lesson Preparation:

- photocopy page 1-1A and 1-1B - then cut into cards (1 card per student)
- photocopy 1-1C
- copy 1-1E (double-sided, one per student)
- one real apple, a piece of string, cord or yarn
- one straw

### Lesson Introduction:

- Tell the students they are going to be learning all about safety and what they need to do to keep from getting hurt. Ask them what the word Safety means to them. Elicit a variety of rules they know to stay safe as well as stories of people they may know who have had brain or spinal cord injuries.
- Tell them they are going to see a video about a very smart boy who teaches children how to play safely.
- Show the video.

### Learning Activities:

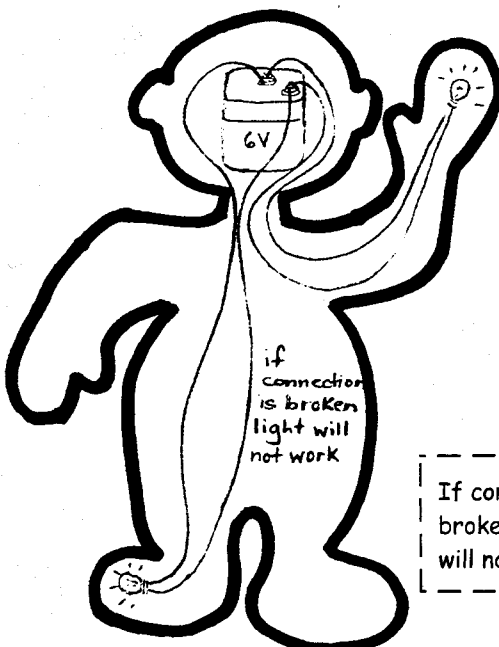
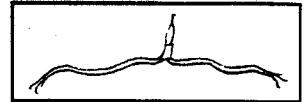
1. Following the video, discuss *why* Street Smart taught his friends those safety habits (...because they protect the brain and spinal cord).
2. Tell the students they are going to play a "Find Your Partner Game" (use 1-1A and 1-1B, cut into cards: 1 card per student). They need to find their partners.
3. Once they have found their partners, they go to one of "Four Corners" (i.e. all brain pictures and brain word cards go to one corner, etc.) and there they decide where on the outline (1-1C which the teacher has taped onto the board), their part should go.
4. Then the teacher tapes one of each picture (brain, skull, spine, spinal cord) onto the picture.
5. Teacher demonstrates how one's skull protects the brain by using an apple and telling the story of how "Mr. Apple Man went out for a ride one day on his bike, without wearing his helmet. He went into a pothole in the road that he didn't see and flew over the handle bars and onto the road! (Demonstrate by dropping the apple hard onto the floor). That soft brain was protected only by his skull - not enough to keep it from getting damaged and now that brain has become mushy and is damaged....If only he had worn his helmet!" (Pass the apple around so the students can feel the soft spot where it fell).
6. To demonstrate how the spinal cord is protected by the spine, string a piece of yarn or string through a straw and separate the hanging end, into strands to illustrate the concept that the spinal cord is made up of nerves which are connected to the extremities.

### Closure:

1. Teach the song: "*The Toe Nerve's Connected To The...*" (1-1D)
2. Show the *TD Think First At Home* activity #1 (1-1E) they are going to take home to do with their family.

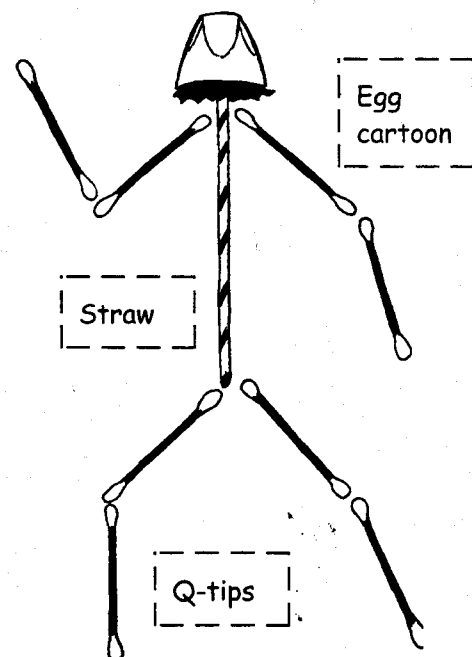
## Optional Extensions:

1. Teach finger play: "Skull and brain, spine, spinal cord.." (1-1D).
2. Conduct an experiment to demonstrate how one's skull protects the brain by using 2 hard-boiled eggs. Peel the shell from one and throw it gently to the floor (it should crack) and then drop one that has the shell still on it (shell should crack but inner egg remains intact)
3. Demonstrate how the brain and spinal cord are connected by using a 6Volt battery to represent the brain, 4 wires with "alligator" clips and small lights (are sometimes referred to as LED's) These may be in your school's Junior or Intermediate grades Science Resources or may be purchased from a retail store that sells radios/stereo equipment. Christmas tree mini-lights work if you cut up the string of lights and strip the ends rather than buying. Use the body outline (1-1C) and place the battery on the head to represent the brain. Connect the clips to the leads on the battery and then stretch the wires out along the arms and legs. As long as the clip is touching the lead, the light lights up - thus demonstrating that the limb can move but if the connection is "broken" to the brain (the clip is undone from the lead), the message is "severed" and so the limb cannot move independently.)
4. As in art activity, the students can make a body by pasting the following items onto a dark piece of paper. Use Q-tips (for arms and legs), a straw (for the spine) (a string inside the straw if you like, to represent the spinal cord), a single egg 'cup' - cut from egg cartons (to represent the skull) and a piece of crushed tissue inside it (as the brain).
5. Discuss the appropriate Think First poster.



If connection is broken, light will not work

4.

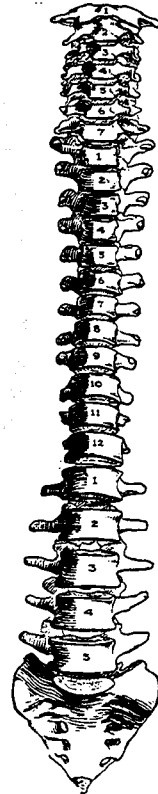
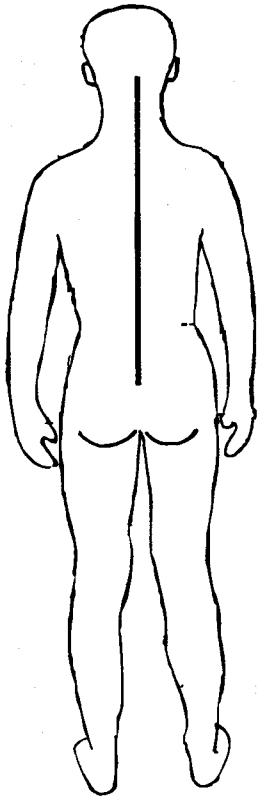
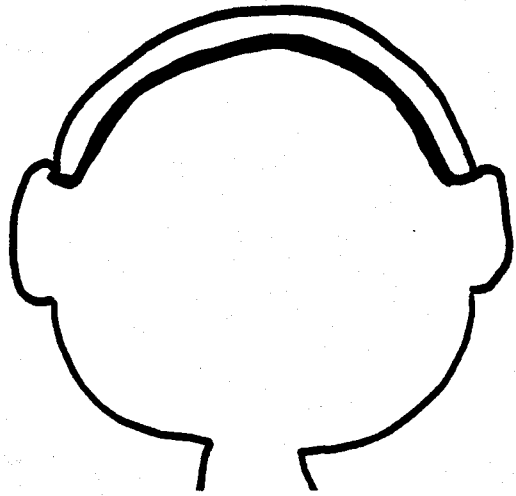


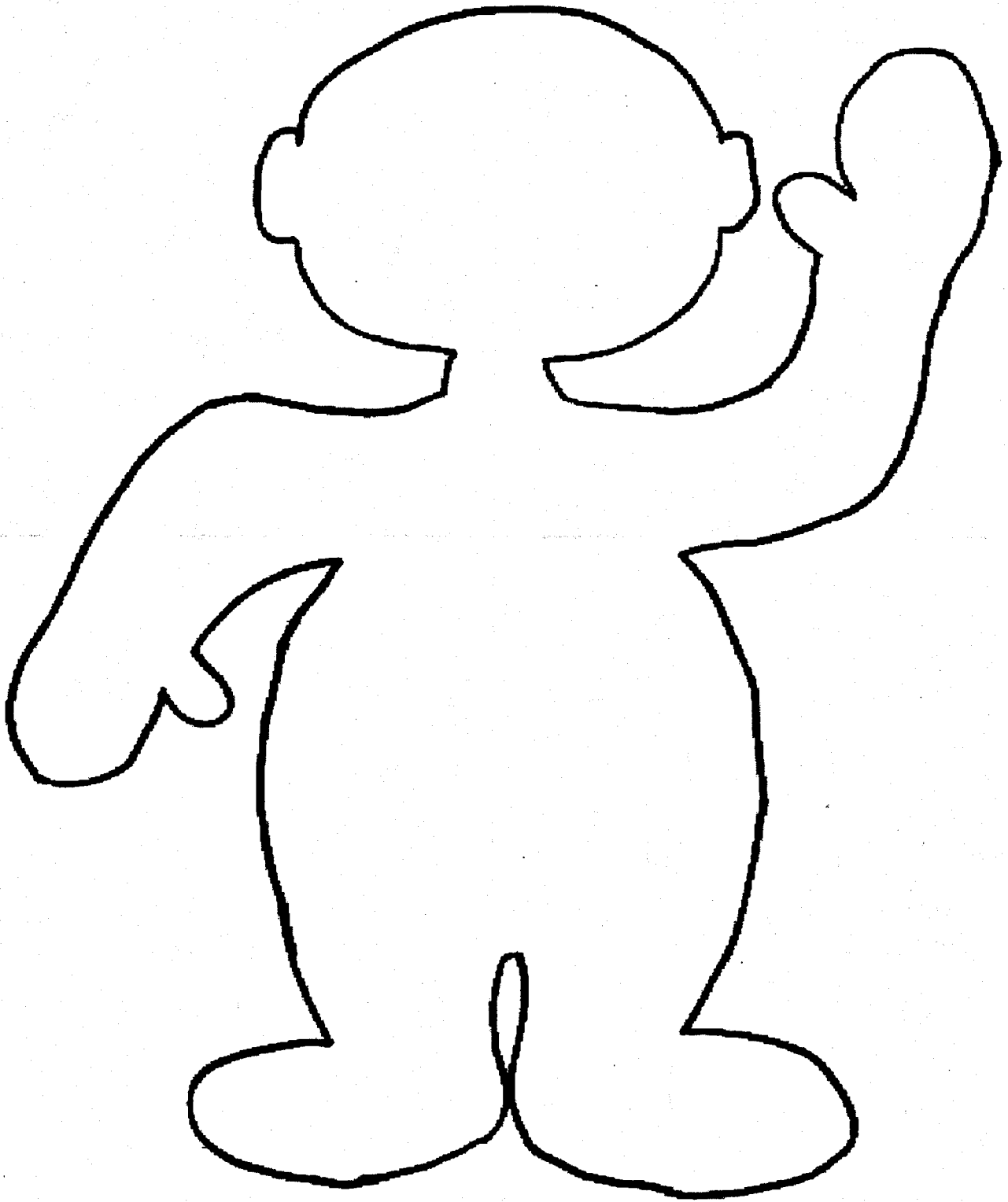
brain

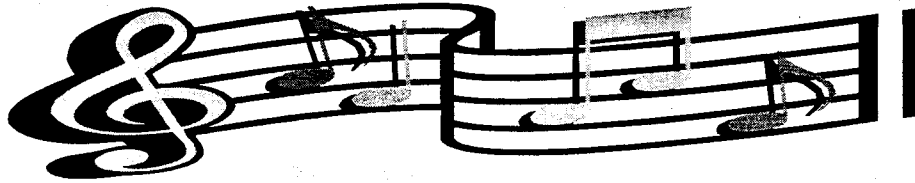
skull

spine

spinal  
cord







# Sing Along



## Skull and Brain

*(to the tune of "Head & Shoulders, Knees and Toes...")*

Skull and Brain, Spine, Spinal Cord,  
Spinal Cord, Spinal Cord  
Skull and Brain, Spine, Spinal Cord,  
Think First and Protect Yourself!

## "Spinal Cord Care"

*(To the Tune of Old MacDonald...)*

The spinal cord runs up the back *Ei, Ei, Oh.*  
Between the head and lower end. *Ei, Ei, Oh.*  
In this cord there are the nerves. *Ei, Ei, Oh.*  
Woven round and down. *Ei, Ei, Oh.*  
The nerves flash here, the nerves flash there,  
Here a tickle, there a pain,  
Everywhere tingle, touch brought to the brain  
The spinal cord runs up the back. *Ei, Ei, Oh.*

Now though the cord seems very strong *Ei, Ei, oh.*  
You must take care to do no wrong. *Ei, Ei, oh.*  
Although the cord is ringed by bones. *Ei, Ei, Oh.*  
With vertebrae along the spine, *E, Ei, Oh.*  
If broken, twisted, snapped or cut or simply smashed,  
It's lines will shut.  
Never nerves flash here, never nerves flash there,  
Here no warmth, there no pain.  
Just a lonely tingle, tangle left in the brain.

The spinal cord runs up the back. *Ei, Ei, Oh.*  
So take good care of your back. *Ei, Ei, Oh.*

## The Toe Nerve's Connected

*(to the tune of "The Hip Bone's connected...")*

"The toe nerve's connected to the foot nerve,  
The foot nerve's connected to the leg nerve,  
The leg nerve's connected to the spinal cord  
... and we're all connected to the brain!"  
*Second verse... almost like the first...  
a little bit louder, and a little bit worse!"*

"The finger nerve's connected to the hand  
nerve,  
The hand nerve's connected to the arm nerve,  
The arm's nerve connected to the spinal cord  
... and we're all connected to the brain!"

# Protect your brain and spinal cord

## "Muscle Hustle"

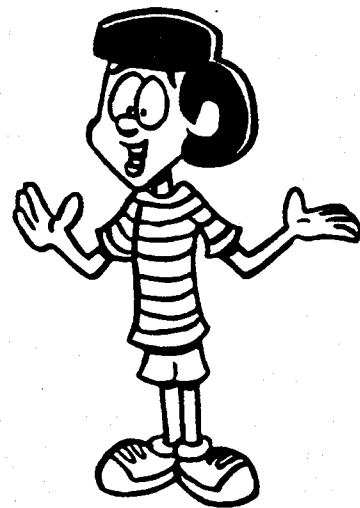
Your brain is your mind...

..it thinks for you.

It's made up of cells  
and connections too!

When you think a thought  
...your brain's working a lot.

When you're working a muscle  
...your brain has to hustle!



## TD THINK FIRST AT HOME ACTIVITY #1

Dear family,

I am learning how my brain and spinal cord can get injured and why I should **THINK FIRST** and use good safety habits to protect myself. The brain is the most important part of me because it makes my whole body work.

Most brain and spinal injuries are preventable!

After I have finished this Think First At Home Activity sheet, please sign it so I can bring it back to my teacher.

To make sure these injuries won't happen in our family, we need to **ALWAYS...**

- Use** - seat belts
- bicycle helmets (and wear them properly!)
  - safety habits around the house
  - safety rules in the car and bus

- Follow** -traffic signs and road rules
- safety habits around water
  - playground rules and rules to protect against falls
  - sports safety rules and the wearing of protective equipment

**Prevent** -children's access to weapons

**Practise** -good problem solving skills

Please help me learn and practice these rules every day!

There are places to visit in your community to learn more about preventing brain and spinal cord injuries:

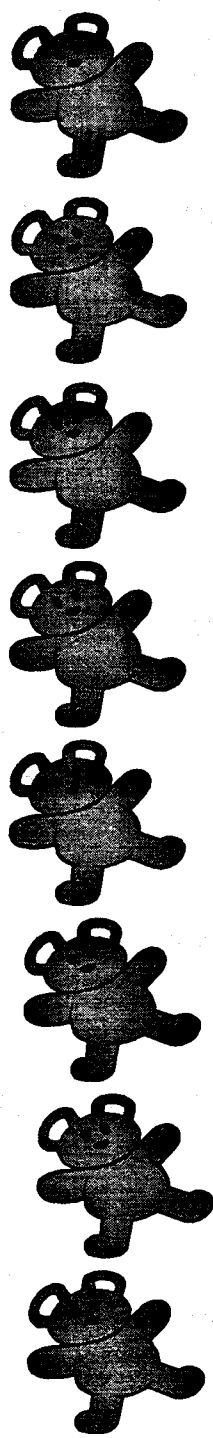
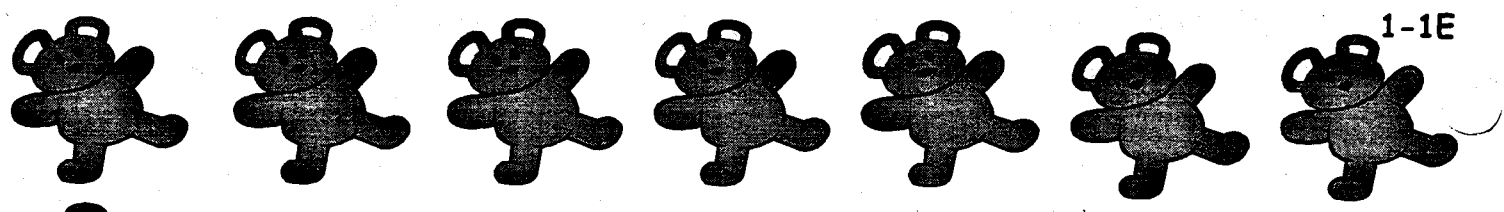
- go to your local library
- visit your doctor's office to see models and charts of the body
- at stores, look for puzzles and games

**At home:**

- review safety rules that protect us from injury
- ask your child to recreate at home the experiments they did at school
- interact with these sites:
  - <http://2www.cpsc.gov/kids/bb.html> Brainbusters. Kids' quiz site
  - <http://www.sass.ca/april99/radar/radrgame.htm> Stay Alert Stay Safe
  - [www.safekidscanada.com](http://www.safekidscanada.com)
  - <http://www.brainium.com>
  - [www.rickhansenkids.com](http://www.rickhansenkids.com)
  - <http://www.med.harvard.edu>
  - <http://faculty.washington.edu/chudler>
  - <http://www.tbguide.com>
  - [www.concussionsafety.com](http://www.concussionsafety.com)
  - [www.obia.on.ca](http://www.obia.on.ca)



"TD Think First For Kids is a program of Think First Foundation of Canada, sponsored by TD Bank and endorsed by The Canadian Congress of Neurological Sciences and the Canadian Association of Neuroscience Nurses."



Dear family,

Please help me to remember all the ways you kept me safe when I was little...

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

(P.S. Thank you! xoxoxo)

I'll try to keep myself safe from now on but please help me if I forget!



(Parents: To complete this page, your child will "interview" you.)

Please help them record your responses.)

\_\_\_\_\_  
Parent Signature